

Additional file 12: Biological process GO terms enrichment for our cohort.

	H1	H2	H3	C1 vs C2	C1 vs C3	C2 vs C3	C1 vs C2-C3
EASE	epithelial cell differentiation digestion oxidation reduction epithelium development regulation of hormone levels hormone metabolic process urogenital system development xenobiotic metabolic process prostate gland development response to xenobiotic stimulus epithelial cell differentiation	cell adhesion biological adhesion ectoderm development collagen catabolic process cell motion taxis chemotaxis skeletal system development neuron projection morphogenesis cell-cell adhesion cell adhesion ectoderm development cell motion	immune response lymphocyte activation defense response cell activation leukocyte activation positive regulation of immune system process cellular defense response humoral immune response inflammatory response leukocyte mediated immunity immune response	M phase cell cycle organelle fission nuclear division mitosis cell cycle phase M phase of mitotic cell cycle cell cycle process mitotic cell cycle cell division mitotic cell cycle	immune response positive regulation of immune system process defense response regulation of lymphocyte activation regulation of T cell activation regulation of cell activation regulation of leukocyte activation positive regulation of cell activation positive regulation of leukocyte activation leukocyte activation immune response	immune response defense response positive regulation of immune system process cell activation leukocyte activation lymphocyte activation regulation of cell activation regulation of lymphocyte activation regulation of leukocyte activation regulation of T cell activation immune response	immune response defense response positive regulation of immune system process cell activation leukocyte activation lymphocyte activation regulation of cell activation regulation of lymphocyte activation regulation of leukocyte activation regulation of T cell activation immune response
EASE synthesis	digestion oxidation reduction hormone metabolic process epithelial cell differentiation hormone metabolic process	chemotaxis taxis cell adhesion biological adhesion locomotion response to external stimulus cell-cell adhesion extracellular structure organization epithelium development central nervous system development chemotaxis cell adhesion locomotion	immune response regulation of immune system process regulation of immune response positive regulation of immune system process defense response humoral immune response lymphocyte activation leukocyte activation immune effector process cell activation immune response	M phase cell cycle phase M phase of mitotic cell cycle mitotic cell cycle mitosis nuclear division cell cycle process organelle fission cell division cell cycle mitotic cell cycle	immune response positive regulation of immune system process regulation of immune system process defense response regulation of immune response leukocyte activation lymphocyte activation regulation of lymphocyte activation T cell activation regulation of leukocyte activation immune response	immune response defense response regulation of immune system process leukocyte activation cell activation regulation of immune response positive regulation of immune system process lymphocyte activation immune effector process positive regulation of immune response immune response	immune response defense response regulation of immune system process leukocyte activation cell activation regulation of immune response positive regulation of immune system process lymphocyte activation immune effector process positive regulation of immune response immune response
ToppGene	epithelial cell differentiation hormone metabolic process digestion lipid metabolic process epithelium development regulation of hormone levels monocarboxylic acid metabolic process cellular hormone metabolic process oxidation-reduction process xenobiotic metabolic process epithelial cell differentiation hormone metabolic process digestion	chemotaxis taxis cell adhesion biological adhesion locomotion response to external stimulus cell-cell adhesion extracellular structure organization epithelium development central nervous system development chemotaxis cell adhesion locomotion	immune response regulation of immune system process regulation of immune response positive regulation of immune system process defense response humoral immune response lymphocyte activation leukocyte activation immune effector process cell activation immune response	M phase cell cycle phase M phase of mitotic cell cycle mitotic cell cycle mitosis nuclear division cell cycle process organelle fission cell division cell cycle mitotic cell cycle	immune response positive regulation of immune system process regulation of immune system process defense response regulation of immune response leukocyte activation lymphocyte activation regulation of lymphocyte activation T cell activation regulation of leukocyte activation immune response	immune response defense response regulation of immune system process leukocyte activation cell activation regulation of immune response positive regulation of immune system process lymphocyte activation immune effector process positive regulation of immune response immune response	immune response defense response regulation of immune system process leukocyte activation cell activation regulation of immune response positive regulation of immune system process lymphocyte activation immune effector process positive regulation of immune response immune response
ToppGene synthesis GORilla	hormone metabolic process regulation of hormone levels epithelial cell differentiation cellular hormone metabolic process xenobiotic metabolic process multicellular organismal process regulation of biological quality monocarboxylic acid metabolic process single-multicellular organism process digestion hormone metabolic process epithelial cell differentiation	anatomical structure development tissue development locomotion chemotaxis taxis developmental process collagen catabolic process system development granulocyte chemotaxis response to external stimulus anatomical structure development locomotion chemotaxis	immune response immune system process regulation of immune system process regulation of immune response humoral immune response positive regulation of immune system process defense response response to stimulus complement activation complement activation, classical pathway immune response	cell cycle process mitotic cell cycle cell division cell cycle cell cycle phase mitotic prometaphase M phase of mitotic cell cycle M phase nuclear division mitosis mitotic cell cycle	immune system process regulation of immune system process positive regulation of immune system process regulation of immune response regulation of lymphocyte activation defense response immune response regulation of leukocyte activation regulation of cell activation regulation of T cell activation immune response	immune system process regulation of immune system process immune response regulation of immune response defense response positive regulation of immune system process response to stimulus regulation of leukocyte activation regulation of cell activation regulation of lymphocyte activation immune response	immune system process regulation of immune system process immune response regulation of immune response defense response positive regulation of immune system process response to stimulus regulation of leukocyte activation regulation of cell activation regulation of lymphocyte activation immune response
GORilla synthesis	epithelial cell differentiation hormone metabolic process	cell adhesion locomotion chemotaxis	immune response	mitotic cell cycle	immune response	immune response	immune response
Global synthesis							